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BEFORE THE ARIZONA CORPORATION COMM...

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IN THE MATTER OF THE APPLICATION OF ARIZONA PUBLIC SERVICE COMPANY FOR APPROVAL, OF ITS 2013 RENEWABLE ENERGY STANDARD IMPLEMENTATION FOR RESET OF ITS RENEWABLE ENERGY ADJUSTOR.	**DOCKET NOS. E-01345A-12-0290 AND E-01345A-10-0394** **COMMENTS OF THE INTERSTATE RENEWABLE ENERGY COUNCIL, INC.**

The Interstate Renewable Energy Council, Inc. ("IREC") respectfully submits these comments to the Arizona Corporation Commission ("Commission") on Arizona Public Service's ("APS") 2013 Renewable Energy Standard and Tariff ("REST") Implementation Plan. Our comments address both APS' November 15th 2012 Comments to Staff Recommended Opinion and Order and APS' December 6th 2012 filing which included a report prepared by Navigant titled "Net Metering Bill Impacts and Distributed Energy Subsidies" ("Navigant Report").

IREC is a non-profit organization that has worked for three decades to expand consumer access to renewable energy resources through the development of programs and policies that reduce barriers to renewable energy deployment and increase consumer access to renewable technologies. IREC has participated in regulatory proceedings or provided technical assistance to over 40 state utility commissions on net metering and interconnection issues.

1. APS should be commended for previous efforts to understand distributed generation's full value

APS should be commended for its early attempts to understand the full value of distributed generation ("DG"). This was demonstrated by a landmark study APS commissioned in 2009 titled "Distributed Renewable Energy Operating Impacts," completed by RW Beck ("RW Beck Study"). The RW Beck Study made a first attempt to estimate the value of DG to APS' ratepayers in terms of avoided utility costs. The study was developed through a robust stakeholder process. As the RW Beck Study notes:

> More than 60 individuals representing 35 companies, universities, trade associations and national laboratories actively participated in the Study process, which included an opening and closing forum and five extensive

> workshops in which each task, methodology, and results were reviewed, discussed and evaluated.

Despite the study's robust approach, we acknowledge APS' observation that it may be time to revisit this study, as expressed in their November 15, 2012 comments:

> The RW Beck Study was the starting point of this discussion. But it reflected an early and incomplete understanding of [DG] and the solar industry based upon only a few hundred installations and a narrow window of time. Now, with thousands and thousands of installations and a wealth of data, the conversation is poised to resume.

However, we also caution that utility companies like APS are inherently conflicted on this issue since DG presents a possible challenge to the current utility business model through both the erosion of kWh sales (and associated fixed cost recovery) and as a potential source of competition.[1] Recognizing that both APS and the DG industry seek a mutually agreeable and sustainable future, we agree with other stakeholders that a process should be established to address outstanding issues related to DG such as the value of net metering and any potential cross-subsidization.

2. Net metering is vital to a broad array of customers and businesses in Arizona that benefit from DG

Net metering is the cornerstone of the DG industry, enabling small-scale renewable generation to compete effectively in the electricity sector. Absent net metering, DG providers, including the recent proliferation of successful solar leasing companies, may be unable to access the customers currently served only by utility providers such as APS. As such, any significant changes to net metering policies in Arizona should be thoroughly reviewed through a transparent public process since these changes could affect the customers and businesses that are driving, and benefit from, a rapidly growing part of the state's economy.

3. Net metering issues should be addressed through a robust and transparent public stakeholder process directed by the Corporation Commission ("Commission") or its Commission Staff ("Staff")

Given the critical nature of this issue to the DG industry, we support APS' recommendation to hold workshops to evaluate the future direction of net metering in Arizona. Furthermore, we agree with recommendations from the Vote Solar Initiative ("VSI") in comments filed on December 24, 2012 to conduct these workshops under the auspices of the Arizona Corporation Commission ("ACC") rather than APS itself, and also to expand the scope of the workshops to include other large utilities in Arizona such as Tucson Electric Power.

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[1] In APS' most recent rate case, the Commission authorized the company to implement a Lost Fixed Cost Recovery mechanism that partially, but not entirely, offsets the disincentive to pursue DG (Decision No. 73183).

Conducting these workshops through the ACC would help guarantee a transparent and robust evaluation of the true costs and benefits of DG supported by net metering. Including other Arizona utilities in the process would provide a clear market signal regarding the future potential for DG in Arizona.

4. Stakeholder workshops on net metering should focus on answering specific key questions

In accordance with the concerns expressed in these comments and those of other stakeholders, we suggest several core questions be addressed by any stakeholder process.

- *What costs and benefits should be included in evaluation of net metering bill impacts?*

IREC has enumerated a full list of direct costs and benefits offered by DG on multiple occasions.[2] Some of the benefits our organization has identified include:

  - Avoided Energy Purchases
  - Avoided T&D Line Losses
  - Avoided Capacity Purchases
  - Avoided T&D Investments and O&M
  - Environmental Benefits—NOx, SOx, PM, & CO2 (including avoided costs to comply with future environmental regulations)
  - Natural Gas Market Price Impacts (i.e. fuel price hedging)
  - Avoided RPS Generation Purchases
  - Reliability Benefits (i.e. ancillary services)

IREC supports full evaluation of each of these benefits of DG, as well as the costs, in any future stakeholder process.

- *How should costs and benefits be evaluated? And how will they be updated?*

IREC supports the Solar Energy Industry Association ("SEIA") suggestion of soliciting an independent review, conducted by a third party, of net metering cost and benefits. IREC submits that the Department of Energy ("DOE"), the Federal Regulatory Commission ("FERC"), or the National Association of Regulatory Utility Commissioners ("NARUC") could be potential sources of funding for such a third party analysis. This evaluation should take place through methodology agreed to by a broad set of stakeholders, taking into account the lessons learned from other states that have undertaken similar evaluations. Furthermore, since distributed energy costs and benefits are unique to the present status of each individual utility system, we also suggest that this review of utility DG costs and benefits be updated on an ongoing basis as system conditions change and valuation methods improve.

- *If subsidies do exist, how significant are they? (i.e. what does the average non-DG customer pay to support net metering?) And how do these subsidies compare to other possible or known subsidies?*

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[2] For example, see: http://www.solarabcs.org/about/publications/reports/rateimpact/pdfs/rateimpact_full.pdf

While net metered customers are growing rapidly, they still comprise a small portion of the customer base. As such, the magnitude of any subsidies to support net metering may be small. While no subsidy should be overlooked, it's important to understand the magnitude of this issue, and how quickly it is growing, to help gauge the urgency of the problem. At present it is impossible to say how potential DG cross-subsidies compare to other equity concerns that may have greater effect on customer rates.

- *To what extent does the lost-fixed cost recovery (LFCR) adjustor mechanism mitigate cross-subsidies by recovering a portion of fixed costs from net metered customers?*

In the settlement agreement of APS' most recent general rate case, a rate adjustment was approved called the lost-fixed cost recovery mechanism (LFCRM). This mechanism was designed to help APS continue to recover a portion of its fixed costs even as its revenues decrease due to energy efficiency and DG. Upon taking effect, this adjustor will be applied as a percentage of each customer's bill. If a customer does not offset their entire energy usage through net metering, some portion of their monthly payment to APS will go towards the fixed costs covered by the LFCRM and therefore wont be cross-subsidized. Additionally, some fixed costs are recovered through APS' basic service charge that net metered customers still pay. This would also reflect costs that are not cross-subsidized.

- *How do underlying rates impact the level of subsidy?*

Retail rates are simplistic by design, usually with only one or possibly two Time of Use ("TOU") rate blocks throughout the day. Now that DG is increasingly playing the role of energy supplier, it may be time to reevaluate these static arrangements. Utilities like APS often have sophisticated relationship with large wholesale suppliers involving very dynamic price schedules. Similarly, more granularity of APS' true supply costs than those implied by retail TOU rates might reveal a different avoided cost for DG than what Navigant's cursory analysis provides. In investigating this question, stakeholders should consider the model rate design adopted by Austin Energy known as the Value of Solar Tariff, which credits customers with the utility's avoided energy costs on an hourly basis.[3] This method more accurately reflects the true avoided energy costs provided by DG than most current TOU rate structures.

- *Beyond direct benefits to APS' ratepayers, what societal benefits does DG provide?*

Inclusion of DG in the RES contemplates various societal benefits beyond what APS and its customers experience directly.[4] These benefits might include local industry support, reduced reliance on out-of-state energy sources, reduced environmental impacts, reduced vulnerability to fuel price disruptions, etc. As such there may be rationale for a prudent amount of subsidy if it provides commensurate benefits in service of the public interest. These benefits should also be considered in any evaluation of distributed energy.

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[3] A description of the methodology for determined the Value of Soalr Tariff can be found here: http://cleanpower.com/wp-content/uploads/090_DesigningAustinEnergysSolarTariff.pdf

[4] See A.C.C. Decision No. 69127.

- *If net metering is found to be too costly to support at current levels, what alternatives should be considered to provide continued market opportunities for distributed generation?*

In anticipation of any findings that cause net metering rates to be modified, we encourage early consideration of rate designs that could enable continued success of distributed generation. Novel arrangements such as community solar or virtual net metering, including third party provision of these services, may permit APS to recover necessary fixed costs from customers while providing many benefits solar provides today. IREC's comments to this docket filed on 6 November 2012 provide more details on this subject.

4. The APS report, prepared by Navigant, titled "Net Metering Bill Impacts and Distributed Energy Subsidies" ("Navigant Report") contains many errors and omissions that future stakeholder workshops should seek to address.

The Navigant Report sheds light on an important challenge that is emerging in places with high penetrations of DG. However, we agree with VSI and SEIA that this report is incomplete and cannot substitute for an open and robust stakeholder process. Specifically, IREC believes the report is deficient in the following areas:

- *Avoided Cost Valuation*

Excess generation produced by net metered customers in APS' service territory are currently credited according to the EPR-6 rate schedule, which Navigant uses to approximate APS' avoided costs, (i.e. the value solar DG provides to all ratepayers). Thus, the amount of cross-subsidy identified in the Navigant Report depends significantly on the EPR-6 rate and how well it approximates APS' avoided costs. The Navigant Report uses a hypothetical EPR-6 rate that is significantly different than the current EPR-6 rate in effect for APS customers, as shown in the table below.[5]

	Peak	**Off-Peak**	**Peak**	**Off-Peak**
EPR-6 Rates Currently in Effect for APS	6.590	5.963	7.714	6.172
Hypothetical EPR-6 Rates used in Navigant Report	3.563	3.367	4.058	3.464
% Difference	-46%	-44%	-47%	-44%

Navigant provides the following justification for the difference in rates:

> APS provided an estimate for the costs the Company would avoid due to peak and off-peak distributed PV generation, assuming that more current firm and non-firm avoided costs from APS's IRP that will be reflected in an updated

[5] On June 29, 2012, APS filed compliance updating its rate schedules in accordance with the settlement of its most recent general rate case. In this filing, the EPR-6 rate schedule was left unchanged from the original schedule in effect since 2009.

EPR-6 annual purchase rate.

Without further details about how APS arrived at these new avoided cost numbers, IREC finds this explanation insufficient. Furthermore, these numbers are at variance with prior avoided cost estimates. For example, the RW Beck Study estimated that the avoided cost of DG for APS could be as large as 7-14 ¢/kWh, far in excess of the 3-4 ¢/kWh used in the Navigant Report.[6]

For comparison, Appendix A replicates Navigant's analysis of residential customer bill reductions versus avoided costs, using 1) the hypothetical EPR-6 rate used in the Navigant Report, 2) APS' current EPR-6 rate, and 3) an avoided cost rate derived from the RW Beck Study. The results demonstrate that the purported subsidy may be much smaller than what Navigant estimated or may be non-existent depending on the avoided cost selected.

Regarding the discussion of avoided cost in the Navigant Report, IREC finds the claim that distributed solar provides a "relatively small" capacity value particularly troubling. This reflects an outdated view of resource planning that does not take into account the fact that utilities balance loads and resources across their entire system, not for individual resources. We support VSI's suggestion to use effective load carrying capability (ELCC) as a measure of solar DG's capacity value.

Finally, Navigant's Report provides no explanation of why an average of the firm and non-firm rate for energy is used to approximate avoided cost of DG rather than some other rate. While energy from solar PV is a variable energy resource, it has a high degree of predictability, which makes it fundamentally different from the traditional designations of firm or non-firm used in the wholesale power market. Furthermore, since DG is inherently from local generation sources, there are fewer risks of congestion or curtailment that would typically be associated with non-firm energy scheduled over transmission lines.

- *Use of Hypothetical vs. Actual Solar Customers*

In contrast to Navigant's Report, performed on hypothetical customer classes, analysis should reflect APS' actual solar customer base. This includes evaluating both the current rate structures and the installed system sizes most common to existing solar customers. APS states that it is beginning to see oversized DG systems that are larger than 100% of their peak usage. IREC would have more confidence in APS' evaluation if the company were able to provide current data on actual customer system sizes and these observed trends. Furthermore, data on the rates most frequently used (e.g. E-12, ET-2, etc.) by APS' net metered customers would help advance a thorough evaluation of this issue.

- *Lack of Analysis of Underlying Rate Designs*

[6] In comments filed on November 15, 2012, APS explained that its experience with DG since the RW Beck study has given the company better insight on the cost impacts of DG. APS highlighted the fact that distribution costs are unlikely be avoided through DG deployment. Excluding distribution costs from the RW Beck analysis would only reduce the avoided cost value by up to 0.31 ¢/kWh, resulting in an avoided costs value of 7-13 ¢/kWh.

Any potential cost-shifting impacts identified in the Navigant Report could be an artifact of the underlying rate designs rather than net metering itself. The true avoided cost of energy from solar production may differ from that credited to customers via net metering. The Navigant Report is conducted on the assumption that the net metering rates APS uses reflect the true avoided cost of energy production. However, any retail rate block represents a crude approximation of the real-time marginal cost APS incurs to supply energy throughout the day. Thus, the marginal cost of energy that distributed energy actually displaces for APS may be different than that implied by the retail rate. For instance, if rooftop solar generation occurs predominately at times when APS' marginal generation costs are actually above the peak retail rate then net metering may not fully compensate solar for its true value. To obtain an accurate assessment of avoided energy costs, the utility should perform a production cost model both with and without solar DG and compare the two cases. This would be similar to the practice APS already undertakes for reporting avoided cost information in compliance with PURPA 210 requirements.

Respectfully submitted on behalf of the Interstate Renewable Energy Council, Inc. this 18 day of January 2013 by:

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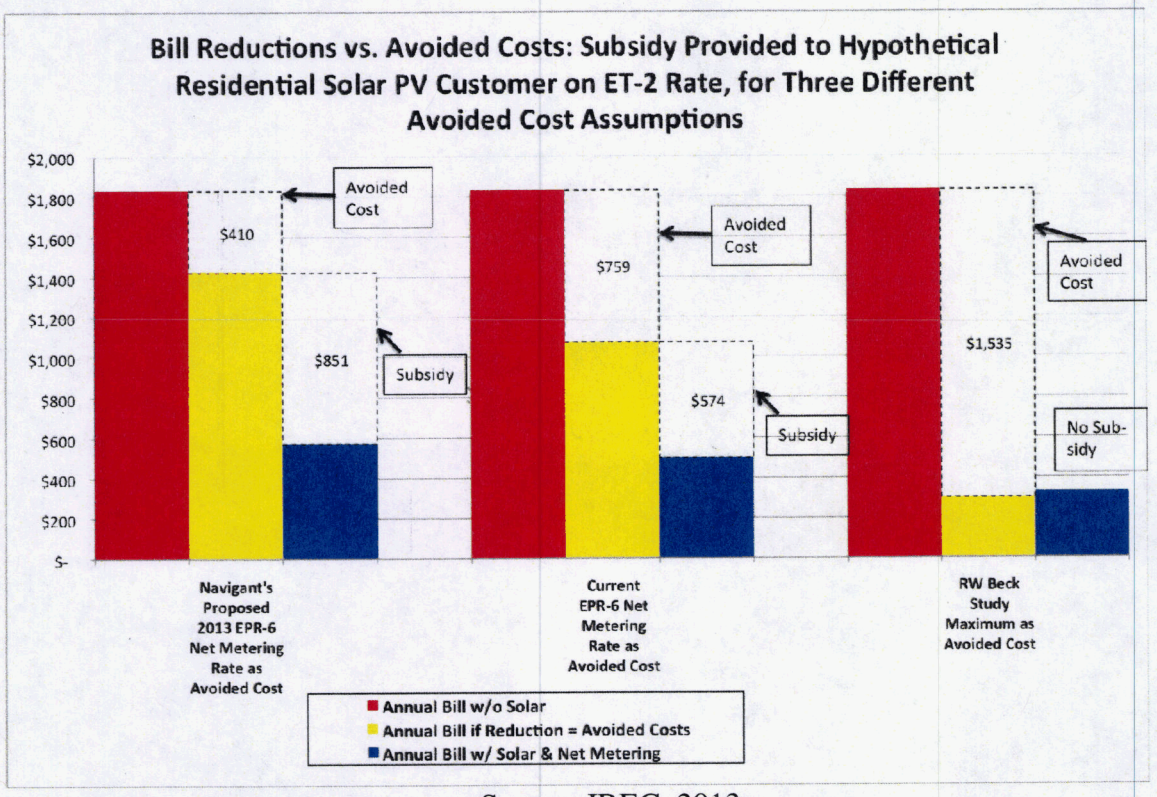

Source: IREC, 2013

Left: Bill reductions versus avoided cost using the hypothetical EPR-6 rate to approximate avoided cost according to Navigant's analysis.
Middle: Bill reduction versus avoided cost, with avoided cost equal to APS' current EPR-6 net metering rate.
Right: Bill reduction versus avoided cost, with avoided cost equal to 13.8 ¢/kWh, the upper limit of the RW Beck Study findings (minus distribution costs).